

REMARKS

STATUS OF THE CLAIMS

In accordance with the foregoing, claims 1, 2, 4, 7, 9, 10, 14, 18 and 20 have been amended. Claims 1-20 are pending and under consideration.

No new matter is being presented, and approval of the amended claims is respectfully requested.

REJECTIONS OF CLAIMS 1-3, 5-6, 8 AND 17-20 FOR OBVIOUSNESS UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER COHEN (U.S. PATENT NO. 6,014,626) IN VIEW OF SEWALL ET AL. (U.S. PATENT NO. 6,708,146)

The rejections of claims 1-3, 5-6, 8 and 17-20 are respectfully traversed and reconsideration is requested.

In the rejection, the Examiner notes that Cohen fails to disclose the feature in the invention of matching the input sound signal by using both a voice signal model and a DTMF signal model. The Examiner asserts, however, that Sewall et al. (hereinafter "Sewall") teaches conducting a matching process of the sound signal inputted by using both the voice signal model and the DTMF signal model, citing column 10, lines 45-67 and column 19, lines 28-44.

Sewall discloses a method for classifying signals into a multiplicity of signal classes. (Abstract). According to this method, a voice section or a DTMF section can be identified; however, sound recognition with respect to the voice section or the DTMF section (i.e., the recognition of a phoneme, a word unit, or a DTMF sound contained in these sections) cannot be conducted.

Furthermore, in Sewall, LDF, QDF and the like, are expressly shown as determination methods, and auto-correlation is mainly used as a feature value. A feature value space of a sound or a phoneme is very complicated and, therefore, it is apparent to those skilled in the art that sound recognition is impossible with the determination method and feature value taught by Sewall. That is, even by combining the teachings of Sewall with Cohen, it is impossible to recognize a sound and a DTMF sound from a sound signal in which DTMF sound is mixed in the course of utterance.

In contrast, amended claim 1 recites: among sound signals inputted from the sound signal input part, a feature value for each segment of a sound signal section to be a recognition unit is matched with both the voice signal model and the DTMF signal mode, whereby matching,

with respect to a sound and DTMF, is conducted on a recognition unit bases. (See the Specification at page 10, line 14 to page 12, line 3). The result thereof is compared with a language model, whereby a sound signal is recognized. More specifically, a feature value for *each segment* of a sound signal section (a voice signal section or a DTMF signal section, or both sections) to be a recognition unit is calculated, and the calculated feature value is matched with the voice signal model and the DTMF signal model, whereby the sound signal recognition system, according to amended claim 1, is capable of recognizing a voice sound and a DTMF sound from a sound signal in which a DTMF sound is mixed in the course of utterance.

Therefore, it is respectfully submitted that claim 1, as amended, patentably distinguishes over Cohen, in view of Sewall.

Dependent claims 2-3, 5-6, 8 and 17 depend from claim 1 and inherit its patentable limitations. Therefore, it is respectfully submitted that claims 2-3, 5-6, 8 and 17 also distinguish over the prior art.

Independent claims 18 and 20 include similar recitations to amended claim 1. Specifically, amended claims 18 and 20 recite:

- inputting a sound signal including either one selected from a voice signal section and a DTMF signal section or both sections;

- a sound signal analyzing operation calculating a feature value by conducting an acoustic process for each segment of a sound signal section to be a recognition unit with respect to an inputted sound signal;

- a matching processing operation matching the feature value inputted from the sound signal analyzing part with both a voice signal model and a DTMF signal model.

Therefore, claims 18 and 20 patentably distinguish over the references.

Dependent claim 19 depends from claim 18 and inherits its patentability and, thus, it is respectfully submitted that claim 19 is patentable over the references.

REJECTIONS OF CLAIMS 4, 7 AND 9-16 FOR OBVIOUSNESS UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER COHEN IN VIEW OF SEWALL ET AL., AND FURTHER IN VIEW OF LARSEN (IEEE PUBLICATION – INVESTIGATING A MIXED-INITIATIVE DIALOGUE MANAGMENT STRATEGY)

The rejections of claims 4, 7 and 9-16 are respectfully traversed and reconsideration is requested.

Claims 4, 7 and 9-16 depend directly or indirectly from amended claim 1 and inherit its patentable limitations. Specifically, the combination of Cohen and Sewall does not disclose a matching part including a voice signal model and a DTMF signal model, for matching the feature

value inputted from the sound signal analyzing part with both the voice signal model and the DTMF signal model, as recited in amended claim 1. Also, Larsen does not teach or disclose the above features of the invention and is not cited or relied upon by the Examiner for same.

Therefore, it is respectfully submitted that claims 4, 7 and 9-16 patentably distinguish over the prior art.

CONCLUSION

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. Further, that all pending claims patentably distinguish over the prior art. There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By:

David M. Pitcher

David M. Pitcher

Registration No. 25, 908

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501